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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,789	02/06/2004	Bhupender S. Minhas	PEP-0404	7911

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EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/773,789	Applicant(s) MINHAS ET AL.	
	Examiner Krishnan S. Menon	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
 4a) Of the above claim(s) 31-35 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-30 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim 1-35 are pending as originally filed.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-30, drawn to process of recovering acid from a feed mixture, classified in class 210, subclass 652.
- II. Claims 31-35, drawn to a membrane, classified in class 210, subclass 500.42.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the product membrane can be used for other materially different processes such as blood separation, electrodialysis, etc. The process can be practiced by materially different products such as a Nafion® membrane.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

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Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Paul Purwin on 4/6/06 a provisional election was made without traverse to prosecute the invention of group I, claims 1-30. Affirmation of this election must be made by applicant in replying to this Office action. Claims 31-35 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

The information disclosure statement filed 5/16/05 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. The non-English patents listed in the IDS have, therefore, been not considered, and crossed out.

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Applicant is requested either to submit a concise explanation of their relevance or English translations for their consideration.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1-9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 and 6 of copending Application No. 10/947,019. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in both applications recite same subject matter.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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2. Claims 10-30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims 1-4 and 6 of copending Application No. 10/947,019 and claims 1-13 of copending Application No. 11/369,613. The combination of the claims of the two applications would recite the claimed subject matter of the instant claims. It would be obvious to one of ordinary skill in the art at the time of invention to combine the claims of the '019 and '613 applications to arrive at the claims of the instant application; one of ordinary skill in the art would do so to recover acids and hydrocarbons from the feed mixture.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,3 and 4-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lane et al (US 2,276,210).

Lane teaches a method of separating a mixture of hydrocarbons, sulfuric acid and water, having 80 or 92% acid, and 1-10% hydrocarbon (figures; page 2: column 1 lines 1-5, column 2 lines 32-66; page 3: column 1 lines 65-75) using a membrane to separate acid and water from the feed to the permeate while retaining the hydrocarbon in the retentate. Even if the reference teaches that water may diffuse into the feed side

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during dialysis, the reference teaches raising the pressure above osmotic pressure (see column 1 lines 6-25 of page 3, and column 1 lines 52-68 of page 4), which could prevent diffusion of water into the feed stream. The first retentate (hydrocarbon phase at line 19) has substantially more hydrocarbon than the feed; both permeate streams (lines 32 and 33) have almost no hydrocarbon, or substantially all acid and water.

With respect to the concentration of the retentate and the permeate streams, the reference meets the limitations of claims 5-7 because the retentate retains all the hydrocarbons, thus having a greater concentration of hydrocarbons in the retentate (hydrocarbon phase that exits line 19 in the figure) than the feed, and the permeate (at line 33 or 32) is almost all acid and water and no hydrocarbon (Especially with the second stage as seen in the figure and column 1 lines 52-68 of page 4).

4. Claims 1,2,8,10,16,17, 27, 29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Kozak et al (US 6,183,648).

Kozak teaches a membrane process for recovery of sulfuric acid (column 6 line 51 – column 7 line 62) from the process of sulfonating alkyl naphthalenes (column 4 lines 43-46), permeate containing acid and water, retentate containing the hydrocarbon compounds. Membrane used is PVA or cross-linked PVA – see the references to Linder incorporated by reference by Kozak in column 7 lines 50-62, particularly, US 4,767,645 or US 4,833,014. Secondary process of water reduction – column 10 lines 13-60. Sulfuric acid concentrated by adding oleum – column 2 lines 60-67. Second retentate being used in alkylation process is an intended use of the product, and is not

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patentable. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). the purpose or intended use of the claimed invention must be evaluated to determine whether the recited purpose or intended use results in a structural difference (or, in the case of process claims, manipulative difference) between the claimed invention and the prior art. If so, the recitation serves to limit the claim. See, e.g., *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). Kozak also recycles the acid as claimed (column 10 lines 56-60).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14, 15, 18 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozak as applied to claim 10 above and further in view of Lane.

Instant claims differ from the teaching of Kozak in the concentration of the feed stream. Lane teaches such concentration of feed streams in a similar process. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Kozak to process the feed stream of Lane because the essential difference

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in the feed stream is of acid concentration; Lane teaches that the membrane must withstand the acid, and Kozak's membrane would withstand the acid – see column 7 lines 45-61. Regarding claim 28, Lane also teaches that the dilute acid may be concentrated by any of the well-known process; evaporation to concentrate is a well-known process.

6. Claims 11-13, 22-25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozak as applied to claim 10 above, and further in view of Cole (US 3,963,567).

Claims 11-13, 25 and 26 differ from the teaching of Kozak in the recitation of the membrane used. However, Kozak teaches that electrodialysis is a well-known process (column 10 lines 20-25). It is also known in the art that Nafion® membranes (perfluorinated ionomer membranes) are used in electrodialysis. For example, see Cole column 7 lines 51-67. Applicant also discloses that Nafion is well known in the art, and that the formula of claim 26 is that of Nafion (specification paragraph 24,-28). The first membrane is formed from PVA and cross-linked PVA as shown by the incorporated references in Kozak (column 7 lines 50-62), and applicant admits that PVA gets sulfated to form PVS in sulfuric acid (paragraph 29 of specification). Therefore, the instant claims are not patentable.

Claims 22-24 differ from Kozak in view of Cole in the recitation of the concentrations of the retentate and permeate streams. However, these could be optimized, based on the inherent properties of flux and the selectivity of the membrane,

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and the purity and through put required. Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

7. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozak.

Instant claims differ from the teaching of Kozak in the recitation of the concentrations of the retentate and permeate streams. However, these could be optimized, based on the inherent properties of flux and the selectivity of the membrane, and the purity and through put required. Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'K S Menon', with a stylized, cursive script.

Krishnan S. Menon
Patent Examiner
4/7/06